

### PROMOTING IMMUNIZATION AT EVERY STAGE OF LIFE

mmunization is one of the major public health achievements of the 20th century. To maintain this success, the National Immunization Program (NIP) works with health care providers, partners, and state and local government agencies to ensure that childhood immunizations remain at high levels. The National Immunization Program is also committed to achieving high immunization coverage rates for adolescents and adults especially for hepatitis, influenza, and pneumococcal polysaccharide vaccines. This includes working with private health care providers, state and local health departments, and other partners to foster awareness of immunization recommendations and increase vaccine knowledge. In addition, CDC's Advisory **Committee on Immunization Practices** (ACIP) continually reviews adult and adolescent immunization recommendations as well as the recommended childhood immunization schedule to ensure that it recommends the safest and most efficient protection.

### CHILDHOOD IMMUNIZATION

### CHILDHOOD IMMUNIZATION SCHEDULE

Three advisory bodies collaborate to issue a single schedule of routine childhood immunizations: the ACIP, the American Academy of Pediatrics (AAP), and the American Academy of Family Practitioners (AAFP). The schedule is continually evaluated to ensure the highest level of effectiveness, efficiency, and safety in childhood immunizations.

The following changes have been made to the Childhood Immunization Schedule in recent years.

- The influenza vaccine is encouraged for all children 6–23 months old, whenever feasible, because these children have a substantially increased risk for influenzarelated hospitalizations. However, a full recommendation to annually vaccinate all healthy children aged 6–23 months has not been made at this time.
- A pneumococcal conjugate vaccine was added to the schedule to help protect children from pneumococcal diseases—the leading cause of meningitis, bacterial pneumonia, and bloodstream infections among infants and young children.
- The all–inactivated poliovirus vaccine (IPV) schedule for polio vaccination was adopted. Today, IPV is the only polio vaccine recommended for routine childhood polio immunization in the U.S. While oral polio vaccine is effective, it carries the rare complication of vaccine-associated paralytic polio. However, the ACIP maintains its support for the use of oral polio vaccine as the only vaccine recommended to eradicate polio from the remaining countries where polio is endemic.

- The acellular pertussis vaccines were recommended for exclusive use in the U.S.
- ► The rotavirus vaccine was removed from the immunization schedule.
- ➤ The hepatitis A vaccine was added to the recommended schedule for children in areas with high rates of the disease.
- ► Influenza and pneuomococcal polysaccharide vaccination were added for selected populations at high risk of disease.

### Recommended Childhood Immunization Schedule United States 2003

Vaccine	Age											
	Birth	1 mo	2 mos	4 mos	6 mos	12 mos	15 mos	18 mos	24 mos	4–6 yrs	11–12 yrs	13–18 yrs
Hepatitis B	Hep B *1	only if mot			Hep B#3				Hep B series			
			Hep B *2					ļ				
Diphtheria, Tetanus, Pertussis			DTaP	DTaP	DTaP	DTaP			DTaP	Т	d	
Haemophilus influenzae <b>Type b</b>			Hib	Hib	Hib	Н	ib					
Inactivated Polio			IPV	IPV		IPV				IPV		
Measles, Mumps, Rubella						MM	  R#1 			MMR#2	MM	R#2
Varicella						Varicella			Varicella			
Pneumococcal	line are for sole	cted population	PCV	PCV	PCV	PC	 		PCV	PP	     <b>V</b> 	
Hepatitis A										   Hepatitis 	A series	
Influenza								Influenza	yearly)			
	Range of recommended ages				Catch-up vaccination				Preadolescent assessment			

This schedule indicates the recommended ages for routine administration of currently licensed childhood vaccines, as of December 1, 2002, for children through age 18 years. Any dose not given at the recommended age should be given at any subsequent visit when indicated and feasible. Indicates age groups that warrant special effort to administer those vaccines not previously given. Additional vaccines may be licensed and recommended during the year. Licensed combination vaccines may be used whenever any components of the combination are indicated and the vaccine's other components are not contraindicated. Providers should consult the manufacturers' package inserts for detailed recommendations.

Approved by the Advisory Committee on Immunization Practices (**www.cdc.gov/nip/acip**), the American Academy of Pediatrics (**www.aap.org**), and the American Academy of Family Physicians (**www.aafp.org**)

### VACCINES FOR CHILDREN PROGRAM

Congress established the Vaccines for Children Program (VFC) in 1994 to better ensure equal access to immunizations for all children. The VFC program is a state-operated, federal entitlement program that removes vaccine cost as a barrier to immunization for our needlest children. More than \$800 million was spent by the VFC program in fiscal year 2002 to purchase vaccines for eligible children.

Over 43,000 provider sites are enrolled in the VFC program, and 73 percent of these are private provider sites. The VFC program provides public-purchased vaccine to all enrolled providers who agree to vaccinate VFC-eligible children aged birth through 18 years of age. These children must be Medicaid-eligible, without health insurance, American Indian or Alaska Native. In addition, children who have health insurance that does not cover vaccines are eligible for the VFC program if they are served through a federally qualified health care center.





## EXECUTIVE MEMORANDUM FOR WOMEN, INFANTS, AND CHILDREN

On December 11, 2000, an Executive Memorandum was issued requiring the U.S. Department of Agriculture (USDA) to assess the immunization status of the children participating in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) program. Children who are missing recommended immunizations are, when appropriate, referred to a health care provider. This memorandum also directed USDA and CDC to develop a national strategic plan to ensure more accurate and cost-effective immunization assessment, referral, and follow-up for children at risk.

Since that time, CDC and USDA have worked with other partners to develop and begin implementing the "WIC-Immunization Action Plan." These partners have made substantial progress towards achieving the 24 objectives contained in the plan.

In October 2002, the partners collaborated to produce a live internet webcast for WIC and Immunization Program Managers. Former first lady Rosalyn Carter introduced the program, which provided a comprehensive overview of the WIC and Immunization collaboration, along with guidance on implementing the new WIC policy to ensure immunization screening for all young children participating in WIC. In December 2002, CDC and USDA distributed a CD-ROM-based training kit to all state WIC and Immunization Programs, so they can educate state and local staff to coordinate WIC and Immunization activities to best meet the goals of both programs.

In addition, CDC and USDA validated a new system that allows for a more efficient vaccine status assessment process, using only the diphtheriatetanus-acellular pertussis (DTaP) vaccine instead of the entire vaccine series. This should require fewer resources and allow more WIC sites to implement immunization activities.

### **ENCOURAGING ADULT IMMUNIZATION**

One of the greatest public health challenges is extending the success in childhood immunization to the adult population. Illness caused by vaccinepreventable diseases is expensive in terms of dollars and, more importantly, human lives. Each year we spend \$10 billion treating adults for vaccinepreventable illnesses, and each year more than 30,000 die from diseases that could have been prevented. Fortunately, vaccines are available to prevent many potentially debilitating diseases, including influenza, pneumococcal diseases, and hepatitis B. The hepatitis B vaccine provides protection against common causes of liver disease and liver cancer, making it the first vaccine that is effective in preventing cancer.

### INFLUENZA (FLU) The Disease

Description—Highly infectious viral illness

Symptoms and Signs—Fever and chills, dry cough, runny nose, body aches, headache, sore throat Complications—Pneumonia,

exacerbation of chronic illnesses (such as heart and lung diseases), and death *Transmission*—Contact with an infected person spreading the virus via droplets

**The Impact** (in a *typical* year) *Hospitalizations*—114,000 (more than 43 percent are 65 years old or older)

Deaths—36,000 (more than 90 percent are 65 years old or older)

During the 1990s, influenza epidemics caused 239,000 deaths.

During the 20th century, three influenza pandemics caused more than 600,000 deaths.

Direct medical costs—\$3 to 5 billion

#### PNEUMOCOCCAL DISEASES

(pneumonia, bacteremia, and meningitis)

#### The Disease

*Description*—infectious illness caused by a type of bacteria (pneumococci)

Symptoms and Signs of Serious Pneumococcal Diseases

#### Pneumococcal Pneumonia—

- Occurs when bacteria invade the lungs
- Symptoms may include high fever, cough with production of mucus, shaking chills, breathlessness, and chest pain that increases with breathing and coughing.

### Pneumococcal Meningitis—

- Occurs when bacteria invade the tissues and fluids surrounding the brain and spinal cord
- Symptoms may include headache, stiff neck, fever, mental confusion and disorientation, and visual sensitivity to light. The disease can lead to coma and death. Permanent disabilities among some survivors of the disease include hearing loss (the most common), learning disabilities, mental retardation, seizures, and other sensory or motor problems.

#### Pneumococcal Bacteremia—

- Occurs when bacteria invade the bloodstream
- Symptoms include fever and fatigue, and can be accompanied by pneumonia and meningitis.

Complications—Death
Pneumococcal infections are one of
the most common causes of death in
America from a vaccine-preventable
disease.

Additional Dangers—Drug-resistant strains of pneumococcus are increasing. Almost a fifth of the isolates of pneumococci tested by the CDC in 2000 were resistant to penicillin.

Transmission—Pneumococci are in many people's noses and throats, even if they are not ill, and can be transmitted to others through respiratory droplets. It is not known why some bacteria suddenly invade the body and cause disease.

### **The Impact** (in a *typical* year)

#### Pneumococcal Pneumonia

- Cases (hospitalized)—100,000 to 135,000
- Deaths—12 percent of those infected with invasive pneumonia (mostly older adults)

#### **Pneumococcal Meningitis**

- ► Cases—3,300
- ➤ Deaths—18 percent of those infected with meningitis (mostly older adults)

#### Pneumococcal Bacteremia

- ► Cases—more than 60,000
- ▶ Deaths—9 percent of those infected (mostly older adults)

### **HEPATITIS B**The Disease

Description—A disease of the liver caused by hepatitis B virus

Symptoms—Potentially none, but if present, symptoms include yellow skin or eyes, tiredness, stomach ache, loss of appetite, nausea, or joint pain. Hepatitis B can infect people without making them feel sick.

Complications—Victims of this disease can suffer from lifelong liver problems such as scarring of the liver, chronic liver disease, and liver cancer.

Transmission—Hepatitis B is spread when someone has contact with the blood of an infected person or has sex with an infected person. This is a highly contagious disease—100 times more contagious than the virus that causes AIDS. Sources of infection are not found for about one-third of those infected with hepatitis B.

Adult Vaccine Recommendations—Adolescents, and high-risk populations (people who have more than one sex partner, men who have sex with other men, injection drug users, and health care workers) should be vaccinated.

#### **The Impact** (in a *typical* year)

Infections—There are approximately 80,000 new infections each year, mostly in adolescents and adults. About 6 percent of these people will become chronically infected and will face a 15 to 25 percent lifetime risk of death from chronic liver disease.

Deaths—About 1.25 million people in the U.S. suffer from chronic hepatitis B infection, and each year approximately 4,000 to 5,000 die prematurely from chronic liver disease.

# Accomplishments in 2002 in Adult Immunization

### Tools for Supporting Adult Immunization Practices

#### Guide to Community Preventive Services

The Guide to Community Preventative Services, which is better known as the Community Guide, was developed by a task force of representatives from academia, health care organizations, government organizations, and others interested public health. The guide provides public health decision makers in communities and health care systems with recommendations to promote health and to prevent disease, injury, disability and premature death. The "Vaccine-Preventable Disease" section of the Community Guide describes a range of interventions which when implemented are known to raise adult vaccination coverage. These recommendations can be accessed online at www.thecommunityguide.org NIP staff are working on guidance which will be published in 2003 to help health care providers decide which combination of interventions is most appropriate for their practice settings and mix of patients.

### Adult Clinic Assessment Software Application

The Adult Clinic Assessment Software Application is a tool that can be used by health care practitioners and clinic managers to estimate their vaccine coverage levels and help determine an appropriate course of action to improve coverage. The first version was produced and distributed in 2002.

### Increasing Adult Vaccination Rates: WHATWORKS

This instructional CD-ROM was developed by NIP in collaboration with the Association of Teachers of Preventive Medicine. Individual practice and clinic staff can use this tool to test their adult vaccination knowledge, reference a substantial number of adult immunization resources, review frequently asked questions and model practices, select strategies to increase vaccination rates, and create an action plan for increasing adult immunization.

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### National Influenza Vaccination Summit

In May 2002, NIP and the American Medical Association co-sponsored the second National Influenza Vaccine Summit. One hundred thirty five representatives from over 50 public, private, and nonprofit organizations convened in Atlanta, Georgia to explore relevant issues and make recommendations regarding the annual effort to encourage influenza immunization. By the close of the summit, 50 recommendations had been made, covering six categories. Prior to the summit, five working groups were formed, and these groups will address the summit's recommendations. The following are examples of key recommendations in each category.

### Communication (25 recommendations)

Support the existing efforts of CDC and the Centers for Medicare and Medicaid Services to encourage nursing home medical directors to establish standing orders for influenza vaccinations.

### Vaccine Payment (16 recommendations)

Identify local distribution channels for influenza vaccine. To maximize their access to the influenza vaccine supply, ensure that health care professionals—especially those serving high-priority populations—are aware of these channels. Local health departments should be heavily involved in this activity.

# Vaccine Handling, Distribution, and Storage (1 recommendation)

Compile information from existing influenza vaccine package inserts, flyers, guidelines, standards, and other tools regarding vaccine handling, distribution, and storage. Stress the importance of this information and provide it to distributors and health care professionals.

### Community Immunization (2 recommendations)

Investigate the feasibility of introducing the use of safety syringes in high-volume vaccination settings.

# State and Local Support and Promotion (5 recommendations)

Conduct a study to determine whether using the higher-priced, pre-filled syringes rather than 10-dose vials is justified to eliminate vaccine wastage in clinics.

### Implementation of Interventions (1 recommendation)

Promote computerized adult immunization registries that include a reminder-recall function.

### **Influenza Vaccine Communication**

Following two years of substantial delays in production or delays in distributing influenza vaccine, the major influenza vaccine manufacturers produced record amounts for the 2002–03 season. In 2002, over 95 million doses were produced and, by the end of October, over 82 million doses had been distributed.

### National Media Campaign

A national media campaign was launched in October 2002 to inform the public that there was an ample supply of vaccine available and to increase awareness of CDC's influenza vaccine recommendations. The campaign began in October with a press conference and a media teleconference, followed by a second media teleconference in November. Between October 2002 and January 2003, three English and two Spanish video news releases as well as four English and three Spanish audio news releases were produced and distributed, via satellite, to every major city in the country. Additionally, two suggested newspaper articles were distributed to every major newspaper in the country.

#### **Print Materials**

Print materials for the 2002–03 influenza season were distributed in two phases.

Primary Campaign—In early
September, a package of print samples
was sent to 3,000 local, community
and state health departments, and
private providers. The providers were
notified that these and many more
materials were available for
reproduction on the NIP Web site.
Eight new posters and five new flyers
were developed for the 2002–03
influenza season and material used in
previous seasons was updated. In
addition, providers could access a
pediatric dosage chart to remind them
of the appropriate dosage for children.

"Catch-up" Campaign—In mid-November a second set of print samples were distributed to 3,000 local, community, and state health departments in addition to another 3,000 pharmacists in states where pharmacists are allowed to administer the influenza vaccine. These posters and flyers encouraged those who had not yet received the influenza vaccine to get a shot to protect themselves and their loved ones.

### Influenza Immunization (flu) Web site

The influenza Web site was updated and expanded for the 2002-03 influenza season. This site helps health care providers obtain the latest information and developments in influenza vaccine production and distribution, learn about new recommendations for influenza immunization, and access a wide range of patient-education material. Information is also provided for both the public and health care providers on the disease and which people are at greatest risk for complications from influenza. This season, a Flu Gallery was added which contained patienteducation materials in several formats. Health care providers can download and reproduce much of the material on their office computer printer and office copier. And commercial printers can access the files they need for higher quality reproduction in larger numbers and sizes.

#### Influenza Bulletin

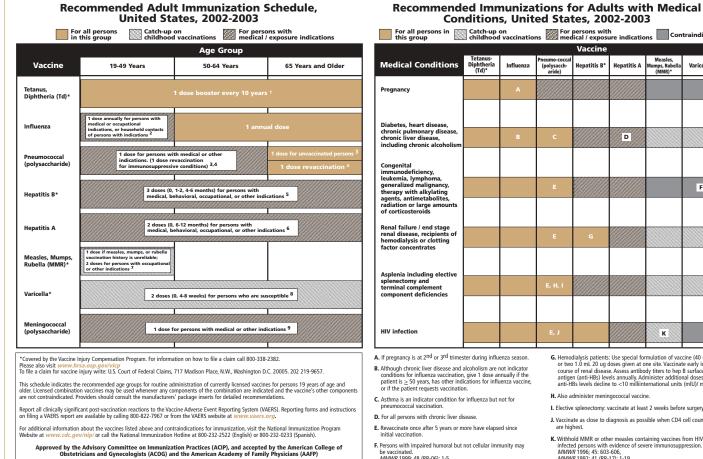
2002 marked the second year that NIP produced and distributed the Influenza Bulletin. This publication, which is distributed approximately every two weeks, provides the latest information on developments in vaccine production, supply, distribution, and other relevant news. The publication is electronically distributed to partner organizations and their members, and is also available on the NIP Web site, where health care providers and other interested people can subscribe. With over 850 subscribers, the *Influenza Bulletin* has been very well received and will be offered again in 2003.



Poster—When the flu season rolls around—GET A FLU SHOT

#### **ADULT IMMUNIZATION SCHEDULE**

The first-ever adult immunization schedule was published by the CDC in 2002, and has been approved by the ACIP. The schedule provides a user-friendly summary of immunization recommendations for adults and carries the endorsement of the AAFP, the American College of Physicians—American Society of Internal Medicine, and the American Academy of Obstetricians and Gynecologists.



### For all persons in this group Catch-up on this group Catch-up on medical / exposure indications Contraindicated Vaccine Measles, lumps, Rube (MMR)\* Hepatitis B\* Hepatitis A Varicella\* D F G. Hemodialysis patients: Use special formulation of vaccine (40 ug/mL) or two 1.0 mL 20 ug doses given at one site. Vaccinate early in i course of renal disease. Assess antibody titers to hep B surface antigen (anti-HBs) levels annually. Administer additional doses i anti-HBs levels decline to <10 milliinternational units (mlU)/ mL H. Also administer meningococcal vaccine I. Elective splenectomy: vaccinate at least 2 weeks before surgery. J. Vaccinate as close to diagnosis as possible when CD4 cell counts K. Withhold MMR or other measles containing vaccines from HIV-infected persons with evidence of severe immunosuppression. MMWR 1996; 45: 603-606. MMWR 1992; 41 (RR-17): 1-19. F. Persons with impaired humoral but not cellular immunity may be vaccinated. MMWR 1999; 48 (RR-06): 1-5.

### STANDARDS FOR ADULT IMMUNIZATION PRACTICES

With the support and assistance of the National Vaccine Advisory Committee, NIP staff collaborated with representatives from numerous partner organizations to develop updated adult immunization standards. The new standards have been endorsed by almost 40 professional organizations, including the AAFP, the AAP, the American Medical Association (AMA), the Infectious Diseases Society of America, and the National Medical Association. The updated standards will be published in 2003.

## Significant Achievements in Adult Immunization

# RACIAL AND ETHNIC ADULT DISPARITIES IN IMMUNIZATION INITIATIVE (READII)

Adult immunization coverage levels are well below the Healthy People 2010 goal of 90 percent, and racial and ethnic disparities in influenza and pneumococcal vaccine coverage rates continue to exist. In 2001, 67 percent of white people over 65 years of age received influenza vaccination, compared to only 48 percent of African Americans and 55 percent of Hispanics in this same age group. Disparities for pneumococcal vaccination coverage were even wider. About 64 percent of white Americans over 65 years old have received a pneumococcal vaccination, as compared to 39 percent of the African Americans and 42 percent of the Hispanics in this same age group.

In light of these statistics, the Department of Health and Human Services (HHS) has made the elimination of racial and ethnic disparities in influenza and pneumococcal vaccination coverage for people 65 years of age and older a priority. To help address this priority, CDC established the Racial and Ethnic Adult Disparities in Immunization Initiative (READII), which is a two-year demonstration projects in five sites—Rochester, New York; Chicago, Illinois; Milwaukee, Wisconsin; San Antonio, Texas; and 19 rural counties in Mississippi.

These sites are developing and implementing community-based influenza and pneumococcal immunization plans by partnering with public health professionals, health care providers and community organizations. In 2002, needs assessments were conducted within each of the communities and the initial efforts to develop evidence-based interventions, media events, and program evaluations began. CDC is closely monitoring these activities and hopes to replicate successful programs in other states and communities across the country.

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# CDC FOUR-CENTER INITIATIVE: VACCINES FOR ADULTS AT RISK FOR HEPATITIS (VFARH)

Four of the CDC centers have been collaborating for the past several years to bring hepatitis prevention among adults to the forefront of public health disease prevention efforts: NIP; National Center for Infectious Diseases; National Center for HIV, STD and TB Prevention; and Center for Substance Abuse Treatment.

Hepatitis B virus infection is one of the leading causes of illness and death among vaccine-preventable diseases. In 2001, for example, 7,800 people suffered severe cases of hepatitis B; an estimated 80,000 people suffered new infections: 1.25 million had chronic (on-going) infections, and 5,000 people died from hepatitis B related illnesses. Also in 2001, there were 10,616 reported cases of hepatitis A infection, and it is estimated that there were approximately 45,000 unreported cases. Although the VFC program has made hepatitis A and B vaccine available for children, there is currently no funded hepatitis A and B vaccination program for adults, where illness and death from hepatitis infections are highest.

The VFARH group received data from all of the states indicating that an estimated 3 million people are currently receiving health care services in public sector sexually transmitted disease and HIV prevention facilities, nationwide. If vaccine were made available, these individuals would be

eligible to receive immunizations in these settings. It is estimated that approximately 383,000 doses of hepatitis A vaccine and 3.75 million doses of hepatitis B vaccine would be needed to protect these people.

This is the first time that CDC has been able to obtain grantee-based estimates to quantify the number of public sector adults at risk for hepatitis A and B infection and the amount of vaccine needed to protect this population and prevent infection.

#### **Standing Orders**

The standing orders system enables non-physician personnel such as nurses and technicians in settings such as clinics, hospitals, and nursing homes, to administer U.S. recommended vaccinations without having to get a prescription from individual physicians. The Centers for Medicare and Medicaid Services and CDC recently completed a 3-year program to promote standing orders for Medicare patients in nursing homes. Initial data showed that standing orders are both more effective and more cost-effective than other available or used methods when it comes to getting more nursing home residents immunized against influenza and pneumococcal diseases.

# Continuing and Future Efforts in Adult Immunization

- Help improve physician and institutional practices with regard to adult immunization.
- Identify and overcome the barriers to adult immunization that lead to substantially lower vaccination levels in African-American and Hispanic populations.
- Connect immunization services to preventive health services for other diseases such as heart disease, asthma, diabetes, and breast and cervical cancers.
- Identify and eliminate missed opportunities for vaccination in a variety of health care settings, workplace environments, and other community areas.
- Collaborate with partners to increase hepatitis B vaccination coverage rates among high-risk populations.
- Work with DHHS staff and other federal and state agencies to implement the influenza pandemic preparedness plan that will be finalized in 2003.
- Work with partners and stakeholders to address the 50 recommendations that evolved from the National Influenza Vaccine Summit.



### ADULT IMMUNIZATION

### National Influenza Vaccination Summit

The National Immunization Program and the AMA co-sponsored the 2002 National Influenza Vaccine Summit in Atlanta, Georgia in May of 2002. The summit brought together representatives from more than 50 public, private, and non-profit organizations—all stakeholders in the annual effort to administer influenza vaccine to over 150 million targeted individuals each year. In preparation for the summit, CDC and AMA staff helped organize five working groups to explore relevant issues and make recommendations to the summit participants. In all, 50 recommendations were proposed. The Centers for Disease Control and Prevention and AMA are planning to create four additional working groups and will ask these nine groups, as well as other organizations, to each take the lead in implementing one or more of the recommendations. A new summit is planned for 2003.